



Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

TB Notes
No. 1, 2003

Dear Colleague:

Please be reminded that World TB Day is approaching. World TB Day is held each year on March 24th to commemorate the date when Robert Koch announced his discovery of the bacillus that causes TB. Around the world, TB control programs, nongovernmental organizations, and others take advantage of the increased interest in TB generated by World TB Day to describe their own TB-related problems and solutions, and to support worldwide TB control efforts. CDC strongly encourages state and big city TB controllers to develop specific state or local activities or special messages to take advantage of the press interest that World TB Day will stimulate. As we announced in an e-mail to TB controllers and CDC field staff, we are currently aware of several planning activities in preparation for World TB Day, in addition to a number of events that have occurred or that are already scheduled. These include the following:

- ☐ November 19, 2002 - The National Coalition for the Elimination of Tuberculosis (NCET) established a World TB Day planning committee that is currently drafting tailored messages for use with opinion leaders.
- ☐ March 21, 2003 - A Notice to Readers about World TB Day and TB-related material will appear in the *Morbidity and Mortality Weekly Report (MMWR)*.
- ☐ March 24, 2003 - The U.S. Agency for International Development will sponsor a press conference at the National Press Club.
- ☐ March 27, 2003 - The U.S.-Mexico binational TB card pilot project will be launched in El Paso, Texas.
- ☐ The National Center for HIV, STD, and TB Prevention (NCHSTP) Office of Communications is developing a media advisory relating to TB elimination in connection with the *MMWR* articles.
- ☐ The World Health Organization and the American Lung Association will issue press releases.

If your TB control program is planning an event around World TB Day, we would like to hear about it. As soon as your event is planned, please send an e-mail summarizing the event to Scott McCoy at SmcCoy1@cdc.gov. We will post these activities on the 2003 World TB Day section of the CDC Division of TB Elimination Web site.

DTBE continues to investigate cases of severe liver injury associated with the use of the regimen of 2 months of rifampin and pyrazinamide (RZ) for the treatment of latent TB infection (LTBI). Revised recommendations for the use of RZ were published in the August 31, 2001, issue of the *MMWR*. On October 24, 2002, an Epi-X announcement providing an update on severe liver injury associated with RZ treatment for LTBI was posted. A summary of the cases reported to date was published on November 8, 2002, in the *MMWR*. On September 24, 2002, we sent out a letter to TB control practitioners who prescribe RZ and asked them to complete an important survey, a Patient Cohort Enumeration, that reports the number of persons taking this regimen. Less than 50% of the surveys have been returned to DTBE. Because of the extreme importance of determining the rate of adverse events associated with the RZ regimen, it is imperative that we receive all of these surveys. If you received one of these surveys and have not yet completed and returned it, please do so now. For a more detailed update on the RZ investigation, please see the article by Lauren Lambert in this issue.

Please mark your calendars: the National TB Controllers Workshop is being held this year at the Capitol Hilton in Washington, DC, the week of June 9 - 13, 2003. As you know, this annual meeting and workshop is a chance for all of us in TB control to learn something new, make new contacts, renew old acquaintances, and share our knowledge and experiences with others. The theme of the workshop is "*Maintaining Momentum*" and will focus on priority program activities or initiatives in the areas of case management, contact investigations, and targeted testing and treatment of latent TB infection. We will send you more information about the meeting as it becomes available.

The Advisory Council for the Elimination of Tuberculosis (ACET) met on November 7 and 8, and again on February 4 and 5, at Corporate Square in Atlanta. In the first meeting, we heard that Dr. Harold Jaffe had been selected as the Director of NCHSTP and Dr. Andy Vernon, formerly project officer for the TB Trials Consortium, had been hired as the NCHSTP Associate Director for Science. I reported that the binational TB card was being tested in several pilot areas. Dr. Charles Nolan described the September 27 visit by ACET members to Washington, DC, to provide information on TB to Dr. Eve Slater, Assistant Secretary for Health, Department of Health and Human Services (DHHS). Dr. Slater was receptive to the presentation, but implied that bioterrorism-related activities would probably have a higher priority for funding than TB programs. Dr. Elsa Villarino of DTBE's Research and Evaluation Branch (REB) then discussed adverse events involving tuberculin reagents; the group recommended completion of analyses and consideration of publication. In the afternoon, Dr. Ron Valdiserri reported on the November meeting of the DHHS/Department of Justice Workgroup on post-INS detention completion of TB therapy. The INS was clearly receptive to working with DHHS but may have their hands tied in regards to making changes in the law. We heard Dr. Diane Bennett, previously with DTBE and now with the NCHSTP Division of HIV/AIDS Prevention, report on the 1999-2000 US National Health and Nutrition Examination Survey (NHANES) of tuberculin skin test data. The preliminary estimate of the U.S. prevalence of TB infection between 1999 and 2000 was 4.1%, and was substantially higher in foreign-born persons. Dr. John Jereb of the

Field Services Branch (FSB) gave an update on INH-associated liver injury; he stated that the surveillance system is imperfect, but that during site visits, health care providers can be educated on the subject and reminded of its importance. Reconvening the next day, we were addressed by Dr. David Fleming, CDC Deputy Director, who expressed his appreciation to ACET members for their service and discussed the need for TB controllers to work closely with bioterrorism programs in building up the nation's public health infrastructure. Efforts to prepare our nation for bioterrorism attacks will likely increase our readiness for TB outbreaks as well. Drs. Paul Halverson and Michael Hatcher of CDC's Public Health Practice Program Office, and Ms. Sue Etkind, TB Controller for Massachusetts, gave presentations on public health infrastructure issues. There was general agreement about the need to strengthen the capacity of state and local health departments in the area of TB control, particularly if federal funds are shifted towards other priorities such as bioterrorism. Dr. Zach Taylor of FSB gave an overview of the TB cooperative agreement recompetition process; a major point of discussion was how funds should be distributed among recipients. Members of ACET agreed to send a letter to the Director of CDC requesting that any discussion about or funding for bioterrorism activities should also address the public health infrastructure in general. Another important subject discussed was TB elimination in the southeastern United States; Dr. Stephanie Bailey, Director of Health of the Nashville, Tennessee, health department, discussed a proposal to hold a conference to address TB disparities.

In the February meeting, the following topics were discussed: After the directors' remarks, I gave an update on the use of the commercial tuberculin skin tests in routine skin testing programs. Some users of the available tuberculin reagents have experienced problems with adverse reactions, false positive reactions, and other events related to product quality. Dr. Michael Iademarco, Associate Director for Science in DTBE, provided an update on the revision of the infection control guidelines. This has been a tremendous undertaking and will produce a detailed, comprehensive document that reflects CDC's current recommendations for preventing *M. tuberculosis* transmission in health care settings. The afternoon was devoted to several discussions related to TB among persons not born in the United States. Ms. Fran DuMelle of the American Lung Association (ALA) reported on current legislation affecting domestic TB activities, and Dr. Joanne Carter of the nonprofit group Results gave an update on the current legislation pertaining to international TB issues. We have learned that there will be a modest increase in fiscal year 2003 funding for TB control (\$3.8 million). Dr. Sarah Royce shared with us the State of California's experiences in tracking and following Class B immigrants and refugees. Dr. Susan Maloney of CDC's Division of Global Migration and Quarantine (DGMQ) reported on CDC's progress in improving the process of conducting overseas TB screening and stateside notification of TB cases. The staff of DGMQ have made great strides in updating and streamlining this process, including the development and implementation of several new forms, but much remains to be done. Mr. Michael Qualls of the International Activities office in DTBE gave a report on the TB Coalition for Technical Assistance, which was followed by a report from Dr. Anne Fanning, representing the International Union Against TB and Lung Disease (IUATLD), on its current activities. The next day Dr. Eric Blank,

representing the Association of Public Health Laboratories (APHL), gave a report on the Fourth National Conference on Laboratory Aspects of TB, which was held in December in San Francisco. The conference provided attendees with information on current technical and programmatic issues including quality assurance, delivery of optimal TB laboratory services in response to the changing epidemiology of TB in the United States, and the applications and impact of new technologies and recommendations for drug susceptibility testing. In addition, he gave an update on a national task force to improve TB laboratory services. Dr. Stephanie Bailey reported on the progress of the workgroup on TB in the southeastern United States and in U.S.-born African Americans. Funding has been awarded to the sites conducting research and the studies are scheduled to begin soon. I then gave an update, along with Dr. Gene Migliaccio of the Immigration and Naturalization Service (INS), about the ongoing discussions between CDC and INS on ways to improve completion of therapy in persons with TB being held in INS custody. And finally, Mr. Scott McCoy of DTBe's Communications and Education Branch shared with us the plans for World TB Day, which include the official kick-off of the binational TB card pilot project in Texas on March 27.

As usual, DTBE staff have been involved in the development of several publications and training products. A Mantoux Tuberculin Skin Test Training Materials Kit is now available for ordering; please see the related article in this issue. DTBE recently worked with staff of the *MMWR* to develop and distribute an *MMWR Dispatch* - initially distributed in electronic format only - that provides guidance on the use of the QuantiFERON®-TB test, a new skin test for latent TB infection that uses serum instead of tuberculin. The recommendations were also published on January 31, 2003, in the *MMWR Recommendations and Reports* series; you can access the report at http://www.cdc.gov/mmwr/mmwr_rr.html. In addition, the TB treatment statement was published February 15 in the *American Journal of Respiratory and Critical Care Medicine* (*Am J Respir Crit Care Med* 2003; 167: 603-662). This document puts forth TB treatment guidelines developed by the American Thoracic Society, the Infectious Diseases Society of American, and CDC. The statement can be accessed electronically at <http://www.thoracic.org/adobe/statements/treattb.pdf>. Later this year, CDC will publish the same document in the *MMWR Recommendations and Reports* series.

Kenneth G. Castro, MD

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Note: The use of trade names in this issue is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Number 1, 2003

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

The First MDRTB Patient in LA County Detained at Home by Court Order

This article relates the interactions of a CDC public health advisor (PHA) with the first chronically contagious multidrug-resistant TB (MDRTB) patient detained at home in the County of Los Angeles. The experience gave the PHA not only an opportunity to learn about the complexities of providing for home detention, but also a chance to witness how the interactions between the TB Control Program and patients with TB affect disease prevention efforts.

The patient, a 72-year-old Asian male, was first diagnosed with active TB in 1962 in Viet Nam. He came to the United States in 1978. He was nonadherent with multiple treatment attempts over the years, and in 1985 the patient was diagnosed with MDRTB by the County of Los Angeles Department of Health Services.

Numerous challenges subsequently evolved between the patient, the TB Control Program, and the County health center that was responsible for managing the case. The health center staff noted that the patient repeatedly and persistently asked the local health staff to perform his sputum and X-ray tests, despite the fact that his strain of *M. tuberculosis* is resistant to all known TB drugs; because of this, health center staff

thought the patient was trying to be difficult. More importantly, he was not willing or able to follow either the TB physician's advice or the conditions outlined in the containment agreement that he had signed, so that the TB Control Program had to try increasingly restrictive means of securing the patient's adherence. A containment agreement is a contract between the patient and the County health center that sets forth certain patient behaviors or activities that are necessary to prevent transmission of TB to other persons. Containment is a less-restrictive alternative to civil detention. Two of the conditions set forth in the containment agreement were that the patient wear a mask whenever he is in public and that he notify the County health center of his activities and whereabouts. However, the TB Control Program learned that the patient was working at the garment factory that his son owned, entering a local restaurant, and entering a local market to purchase Chinese and Viet Namese language newspapers without either notifying the health center or wearing a surgical mask.

Another condition to which he had agreed was that no one outside the family could enter his home without authorization from the health center. On one occasion, a public health investigator from the local health center noted more shoes than usual on the front porch of the patient's house (per Asian custom, shoes are not worn inside a house; thus, Asian family members typically leave their shoes on the front porch). The local health center staff counseled the patient, reminding him of the conditions of the containment agreement. Unfortunately, some

TB Notes is a quarterly publication of the Division of TB Elimination (DTBE), National Center for HIV, STD, and TB Prevention (NCHSTP), Centers for Disease Control and Prevention (CDC). This material is in the public domain, and duplication is encouraged. For information, contact:

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of the County health center staff began to believe that this patient could not be trusted or reasoned with and that his flagrant disregard for the containment agreement indicated that he had no respect or consideration for himself, his friends and family members, or the community.

As a result of the problems noted above, the Los Angeles County TB Control Program served an Order of Civil Detention to this patient in June 1999. The patient was taken to a regional TB detention center in Lancaster, California, where he was detained for 4 months. After court hearings and negotiations between the TB Control Program, county counsel, and the patient's

attorney, a judge ordered the patient to be detained in his home. The order detaining the patient in his home contained many conditions, one of which was that the patient's whereabouts be electronically monitored. The patient was required to wear an electronic ankle bracelet that allowed him only 150 feet of roaming space. The 150-foot boundary constituted the patient's home and front and back yards. If he moved farther than the specified 150 feet, the monitor would send a signal to the monitoring company, and the monitoring company would then notify a designated TB Control Program staff member. A local health center staff member would then be notified that the patient had left his yard and a staff member would go to the patient's home to investigate. County health center staff were to visit on a random basis to assess the patient's compliance with home isolation.

In January 2000, the CDC PHA was asked to help coordinate the TB Control Program Detention Unit. One of his main duties was to work with this particular patient. As a liaison between the patient, the health center, and the TB Control Program, this PHA was responsible for the following tasks:

- Determining why he was not willing or able to cooperate with the health department;
- Determining if the patient understood his diagnosis of MDRTB;
- Re-educating the patient on the contagiousness of his disease and the potential for transmitting his multidrug-resistant strain of TB;
- Bridging the language barrier;
- Learning more about the patient's lifestyle; and
- Attempting to assist the patient and his family during his confinement by taking

the patient's wife to the grocery store (she doesn't drive), arranging for a Chinese-language newspaper to be delivered to the patient's home, and generally functioning as a liaison between the patient and the health department.

The PHA worked closely with this patient for many months and, after a period of time, developed a rapport with him. The patient and his wife were initially unsure of the PHA's motives, but eventually they began to trust him. Over time, the patient also came to trust the County health department in general. One indicator of this trust was that the patient finally shared with the PHA that he had been taking Chinese herbal medicine in the hope that it would cure his TB. He confided that he was also eating specific exotic foods because he believed that these foods would strengthen his lungs and eventually help his body to get rid of the TB germs. He also gave his reason for asking the local health center staff to do the sputum and X-ray tests so frequently: he was anxious to know if the Chinese herbs and the foods he had been eating were having any effect on his disease. Even though there was no medicine to treat his disease, he refused to give up hope. He had actively researched new information treatments for his disease and had also read many articles that claimed that TB can be cured through Chinese medicine.

Eventually, as mutual trust continued to develop between the County health department and the patient, alternatives to the electronic ankle bracelet were pursued. The court finally determined that the patient no longer had to wear the electronic ankle bracelet. As an alternative to that monitoring system, the TB Control Program decided to experiment with a computerized voice verification system. The voice verification system is a telephone-based system designed to verify the patient's voice print. The computer at the monitoring company

generates random calls to the patient's telephone. When the patient answers the telephone, he is required to recite a series of numbers. This voice sample is then compared to the patient's original voice print that was created during the enrollment process so that the computer can determine that the voice it hears is in fact the patient's voice. After a short trial period, it was determined that the language barrier again was a problem; because of this patient's difficulty in following instructions in English and his accent, the voice verification system did not work for him.

After the failed attempt with the voice verification system, the TB Control Program briefly considered using the global positioning satellite system (GPS). The GPS is able to track a person's movements via satellite. To be tracked, the person must carry a portable device wherever he goes. The portable device creates a record of every place the person travels, the length of time he visits each place, and the speed and direction of travel. "Hot Zones" can be established if a person is forbidden from traveling to a specific area. Ultimately, GPS was rejected because the TB Control Program believed that it was impractical to require the patient to carry around a device the size of a shoebox whenever he left his home.

Since the patient's whereabouts were no longer being electronically monitored, it became the responsibility of the local health center staff to randomly monitor the patient's activities. The patient was still detained to his home, so the health center staff were responsible for ensuring that the patient remain in his home or on his property. The staff conducted the monitoring simply by knocking on the patient's door at random periods throughout the day to determine if the patient was in his home and unauthorized visitors were not present.

With the passage of time, the patient has been granted more liberty. He takes walks 7

days a week on a designated route that is periodically monitored by the local health center staff, and the local health center staff are still conducting regular sputum and X-ray tests. As a representative of the TB Control Program, the CDC PHA continues to assist the patient and his wife with their grocery shopping and anything else they may need. Currently, the director of the TB Control Program is consulting with CDC, the National Jewish Medical Center, and other agencies on a possible new treatment for this patient.

Several valuable lessons were learned through working with this patient. The foremost lesson is that patients must be approached with cultural sensitivity and that interactions with all patients must be in a language that is easily understood by the patient. The increasing numbers of MDRTB cases among foreign-born persons highlight the need for effective communication between TB Control Program staff and patients. It cannot be assumed that because a person can engage in limited conversation in one language, the same language can be used to provide complex information and instruction. This patient can converse to a limited extent in English, but English was not the appropriate language in which to provide information about his disease, legal issues, or anything else binding or of importance. One solution to the problem of bridging a language barrier is for trained interpreters to be used whenever necessary. In addition, TB control programs throughout the country should follow the lead of Los Angeles County and seek creative ways to detain a person outside of a hospital or other restrictive setting should long-term isolation be required. Every patient is a unique individual, so we must not use a one-size-fits-all approach to detention.

One day, new and potent drugs may become available to treat TB in the many patients who have multidrug-resistant TB. However, until that day comes, language

and cultural barriers must be overcome so that we can provide care in a culturally competent manner.

—Reported by Kim Do
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Los Angeles TB Control Program

Minnesota Holds Statewide Videoconference on Conducting TB Contact Investigations

In October 2002, the Minnesota Department of Health (MDH) Tuberculosis (TB) Prevention and Control Program held a half-day interactive videoconference entitled "Controlling the Transmission of Tuberculosis (TB) in Your Community: Performing Effective TB Contact Investigations," for local (county) public health department staff statewide. The purpose of the videoconference was to assist local public health personnel in strengthening their TB contact investigation skills and to introduce a new procedure manual and a revised MDH TB Contact Investigation Report form, which will be implemented for all TB contact investigations statewide in January 2003. MDH TB Program staff worked with our agency's Distance Learning Coordinator to plan the logistics of the videoconference. Regional sites were reserved at 12 locations throughout the state to ensure that, despite the state's large size, no participant would have to travel more than 100 miles to attend. The regional sites provided the added benefit of bringing public health nurses from adjoining counties together to discuss common issues and concerns about TB. Participants included 112 local public health professionals, representing 76 of Minnesota's 87 counties and two of Minnesota's 11 tribal governments. Presenters included epidemiology and nursing staff from the MDH TB Program and a public health nurse from the largest of Minnesota's three public TB clinics.

Contrary to national trends, the incidence of TB in Minnesota is steadily increasing. A large proportion of TB cases in Minnesota occur among persons born in countries where TB is common, adding new challenges to traditional TB control activities. But despite an overall increasing incidence rate, TB disease is a rare occurrence in many counties in Minnesota. In 2001, 28 of the state's 87 counties reported at least one TB case, with county-specific numbers ranging from 1-140. Clinicians may be unfamiliar with current recommendations for collaborating with public health professionals to facilitate adequate TB contact investigations. When a case of infectious TB occurs, it is critical that a contact investigation be conducted in a timely and thorough manner, using limited local public health resources in an effective manner and ensuring that the community is protected from further transmission of TB.

Data for infectious TB cases reported in Minnesota from 1998 to 2001 indicate that although 97% of sputum smear-positive cases had contacts identified, only 60% of those contacts were fully evaluated. In addition, among infected contacts of cases reported from 1998 to 2000, only 70% of those who started treatment for latent TB infection (LTBI) completed an adequate course of therapy. These findings do not meet national objectives for TB contact investigations, yet they are consistent with recent national studies that have indicated that the processes and outcomes of TB contact investigations conducted by health departments in the United States need improvement.

According to Minnesota's "Common Activities Framework," which defines the roles of state and local public health agencies statewide regarding communicable disease prevention and control activities, it is the responsibility of each local Community Health Service (CHS) agency to "designate staff within the

CHS agency to have communicable disease responsibilities for TB" and to "assure (that) contacts of infectious TB patients in the CHS jurisdiction are identified, located, evaluated, and followed appropriately." Similarly, the Common Activities Framework states that it is the responsibility of MDH to "provide local public health agencies with a list of minimum expectations for the local TB control nurse," "provide technical assistance to CHS agencies to assure a thorough contact investigation is conducted for each infectious TB case," and collect data on contact follow-up from CHS agencies.

A large portion of the conference was spent covering step-by-step procedures for TB contact investigations, as outlined in a new resource manual. The purpose of the manual is to provide information that will enable local public health professionals to conduct timely and complete contact investigations surrounding cases of infectious TB residing in their jurisdictions, to utilize the system of collaboration between local agencies and MDH to maximize the effectiveness of TB contact investigations, and to implement revised data collection procedures for reporting results of TB contact investigations to MDH. The manual includes follow-up algorithms and documentation forms, and discusses measures for maintaining confidentiality of private medical data. Also included are copies of pertinent CDC Self-Study Modules, the CDC Core Curriculum on Tuberculosis, "TB Interviewing for Contact Investigation" materials from the New Jersey Medical School National Tuberculosis Center, a template letter for notifying health care facilities of infectious TB cases seen in their facilities, a suggested script for use during contact investigation interviews, national TB diagnostic standards, MDH recommendations for targeted testing and treatment of LTBI, and information regarding additional materials available from CDC, the national TB centers, and MDH.

The videoconference also included a review

of the transmission and pathogenesis of TB; the rationale and responsibility for conducting TB contact investigations; recommended contact investigation procedures, documentation and reporting procedures, infection control measures, suggestions for using incentives and enablers in contact investigations, cultural considerations, and guidelines for making interjurisdictional referrals. A 45-minute segment of the videoconference was devoted to a discussion led by the head public health TB nurse in Hennepin County (Minneapolis) about the practical aspects of conducting a TB interview and field investigation, and cultural considerations for working with foreign-born persons. Three question-and-answer sessions were provided to encourage questions and comments from participants at all locations.

The costs of the videoconference were modest and consisted primarily of the photocopying and assembly of the manual and course materials, postage, courier services to deliver course materials to the regional sites, refreshments for participants, and the copying of a videotape of the conference for distribution to local agencies to train future staff. Most participating counties provide videoconferencing facilities free of charge for use by public health workers, and the public health nurse from Hennepin County TB control donated her time. CDC and New Jersey Medical School National TB Center materials were provided at no cost to MDH. There was no charge to participants, although their agencies were responsible for transportation costs incurred by their staff.

Participants completed pretests and posttests. Preliminary evaluation shows that scores improved significantly after completion of the course. The success of the videoconference will also be measured by indices such as the timeliness of future TB contact investigations, completeness of data reported, and evaluation measures

reported on ARPE reports submitted to CDC. Evaluations completed by participants were overwhelmingly positive. Participants indicated after the videoconference that they better understood their role in conducting TB contact investigations, believed they would be more thorough in educating patients about TB, and would be more organized, confident, and persistent when conducting TB investigations in the future.

—Submitted by Deborah Sadt, PHN, MPH
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Multilingual TB Education Hits Hawaii's Airwaves

Since July 2002, the Hawaii Tuberculosis Control Program has been reaching out to the islands' immigrant communities in an innovative way. Through a partnership with Honolulu-based KNDI-AM radio and a grant from the Chamber of Commerce of Hawaii, the TB Control Program has been given radio airtime to use for tuberculosis education.

KNDI prides itself in being one of Hawaii's most diverse and well-established radio stations. Ethnic communities have been listening to the station for 42 years, and today it broadcasts in 13 different languages. Listeners can tune in to KNDI on all eight Hawaiian Islands, from urban Honolulu to isolated Niihau.

Providing TB information to Hawaii's ethnic communities ranks as a top priority, since foreign-born people are at highest risk for TB in Hawaii. In 2001, 83% of the state's TB cases were born outside of the United States. Over the past year, Hawaii's Targeted Testing Program has screened 490 foreign-born persons living in Hawaii. Out of this group, 247 people (more than 50%) were found to have latent TB infection or TB disease. Out of the patients who started TB treatment in this group, 85% have completed,

or are in the process of completing, their course of medicine.

Publicizing these free Targeted TB Testing services to the foreign-born community marked the beginning of the relationship between the Hawaii TB Control Program and KNDI radio. The station has a tradition of featuring social and community issues of interest to non-English speaking audiences. To make this possible, the station's non-profit offshoot, the Ethnic Education Foundation, applies for grants that fund multi-lingual educational programs. When the TB Control Program expressed interest in increasing their presence on the station, the Ethnic Education Foundation helped to secure a grant from the Chamber of Commerce of Hawaii Public Health Fund to cover one year of bimonthly TB education radio programming.

With 24 half-hour time slots to fill, the station's bilingual radio hosts and TB program staff have been busy developing radio shows. Planners are experimenting with interviews of TB doctors and outreach workers, patient "talk story" sessions, ethnic music, and other social and health topics affecting newly arrived immigrants.

Hawaii's Marshall Islander community will be the target audience for a special month-long series of TB radio shows. This community was chosen for three main reasons. First, Marshallese are overrepresented in Hawaii's TB cases. From January 2001 through October 2002, 5.2% of the state's TB cases were born in the Marshall Islands, yet only about 0.5% of Hawaii's citizens are Marshallese. Second, since this is a relatively new ethnic community in the Islands, there have been limited health education materials developed for Marshall Islanders living in Hawaii. Requests for Marshallese health education materials far outweigh what currently exists. Finally, TB program staff have reported high levels of noncompliance among their Marshallese

patients, and requested that an intervention be implemented.

The Republic of the Marshall Islands (RMI) is an independent nation of 34 atolls and islands located between Australia and Hawaii in the Pacific Ocean. RMI is signatory to the Compact of Free Association with the United States, a relationship rooted in U.S. defense interests in the islands. Owing to the free association status, people from the Marshall Islands can live and work in the United States without restriction, and Hawaii has become a popular destination for Marshallese seeking jobs, education, or medical care.

Josephine Hunter, a Honolulu college administrator originally from the Marshall Islands, along with her husband John Hunter, the program director for the American Lung Association of Hawaii, have agreed to host the radio shows in a mix of English and Marshallese. The series will feature special guests from Hawaii's Marshallese community, staff from the American Lung Association and the TB Control Program, and music and news from the Marshall Islands. The TB messages in this program will emphasize the risk factors for TB, the signs and symptoms of TB, the importance of completing the full course of TB medicine, and the free services that are available from the Hawaii TB Control Program.

After these programs are aired, Hawaii's TB health educator will make tapes and CDs of the TB shows to give to Marshallese patients who are on TB medication. It is hoped that the audio information will begin to fill the need for appropriate health education materials. Patients who listen to the program audios will be asked questions about the usefulness of the information so that the effectiveness of this initiative can be evaluated.

In addition to the Marshallese language, TB shows have already aired on KNDI's Laotian, Vietnamese, Samoan, and Visayan (a Filipino dialect) programs. The station's Spanish,

Ilocano, Tagalog, and Cantonese shows will also focus on TB at some point in the year. Special programming is being planned for World TB Day 2003, and for the grand opening of Hawaii's new TB clinic in early 2003.

Through a partnership with the State's Bilingual Health Services Program, the TB Control Program has access to a pool of bilingual workers who speak all languages in which the TB radio shows will be aired. Therefore, the listeners of all shows will be able to receive services and educational materials from the TB clinic in their own language.

Overall, KNDI radio has been an ideal partner in the effort to raise TB awareness in Hawaii. The station's radio personalities are respected community leaders, and have contributed greatly to the development of effective and culturally appropriate TB education programs for Hawaii.

In the near future, select TB radio programs will be available to download from the Hawaii Department of Health TB Program website, www.hawaii.gov/doh/resource/comm_dis/tb/educate.htm.

—Reported by Rachel Blair, MPH
Public Health Educator
and Jason Nehal
Public Health Advisor
TB Branch, Hawaii Dept of Health

Videophone Pilot Project in Washington State for TB Patients

With the focus on efficient use of resources in these budget-stressed times, Snohomish Health District in Washington State is completing a yearlong test of videophones to watch TB patients take their medications at home. Project manager Maggie Osborn believes the potential for savings could translate to more than 225 hours of driving time in home visits per patient in a year's

time. In a health district larger than Delaware, economizing on mileage benefits both the patient and the agency budget.

"Our virtual visits cut down to 3 minutes an encounter that would take 10 minutes plus travel time to do face-to-face," said Osborn. Home visits have been reduced from 22 a month per patient to an average of two visits.

"Public health's preventive services are always a good deal, because prevention saves the costs of future expensive-to-treat illness in addition to protecting health," said M. Ward Hinds, MD, MPH, Health Officer for Snohomish County. "With the videophones we can treat and prevent disease from spreading in our community for even less than before, so the public gets an even better deal," he said.

Snohomish Health District's standard of care requires directly observed therapy (DOT) for all TB patients who have active disease. In 2001, the countywide TB program treated about 600 patients who have latent TB infection and 28 with active TB.

The health district purchased four videophones for less than \$500 each, and installed three in the homes of three actively ill TB patients and four of their household contacts. The fourth unit resides in the TB program office.

"We took great care to select patients who were highly motivated to take their medications and who had strong family support," Osborn said. Other selection criteria included lengthy distance between home and TB office, and multiple patients residing at the same household.

Patients sign a consent form and can withdraw from the voluntary program at any time. TB staff visit the patient's home to set up the equipment, test it, and train the users. Osborn reports excellent compliance and satisfaction among her videophone clients,

and attributes it to ease of use and convenience. Individuals call in, but can be flexible about the timing according to their schedules and the health agency's business hours.

"The videophone is client-friendly," she said. "If they can use a telephone, they can use this." The "stand-alone" model her program uses has a 4-inch screen, is easily installed, and requires only an ordinary telephone line to operate. No computer or IP connections are necessary for it to work. The picture is sufficiently clear to discern the shape, color, and size of pills, and also to visually evaluate the patient's tolerance to the medicines. Optionally, it can be hooked up to a TV screen for a larger picture.

"From a client's point of view, using a videophone is far less intrusive than an in-home visit from staff," said Osborn. "They don't have to dress up, do dishes, or vacuum. Moreover, the virtual visit protects their privacy – there's no health district car parked out front." The clients set a call-in schedule tailored to their needs. Missed call-ins are rare, and usually due to traffic delays or conflicts with other appointments. Add to the list of advantages the improved behavior of one young patient. "When he's on camera, he's a 'star' and takes his pills like a champion," said Osborn, "whereas on a home visit additional coaxing may be necessary."

Challenges. Compared to the advantages of videophone DOT (VDOT), its downsides are thin. Clients could palm or hide their meds easily. Occasionally the video image stalls or goes blank, requiring a second call during peak telephone hours. As with computers, today's VDOT equipment may become outmoded quickly by new developments. For example, wireless videophones are already in use in some Asian countries, and higher-quality IP units are available; however, clients need DSL or cable access to use them. Lastly, insurance

billing for visits is not approved in Washington State, and may be 3 years away.

The bottom line. Although the savings in resources may get the spotlight, Snohomish Health District will measure the success of the videophone project in terms of patient compliance and satisfaction. Since the health agency adopted DOT in 1993, it has identified only two cases of relapsed disease and not one of its patients has developed multidrug-resistant TB. "Telemedicine opens a whole new way to provide patient care, not only for DOT in our TB program," said Osborn, "but also for observing children with special care needs, HIV/AIDS work, and many other case management applications." She noted videophones are a similar success in Tacoma-Pierce Health District, also in Washington State, but knows of no other public health jurisdictions using the technology.

At the conclusion of the test period, Osborn will submit her findings and clients' evaluations to health district officials. She hopes they will consider expanding the VDOT program to more households.

"It's high time to take a fresh look at our traditional methods of service delivery," said Osborn. "Field and office visits used to be the only ways to get the job done, but now technology can help us work smarter," she said. "We still interact with our patients as if we were in the same room, we save staff hours doing it, and we get healthier and happier patients."

To request a copy of the VDOT protocol and patient consent form, contact Maggie Osborn, mosborn@shd.snohomish.wa.gov.

—Submitted by Suzanne M. Pate, MA
Public Information Officer
Snohomish Health District
Washington State

For additional information:

1. DeMaio J, Schwartz L, Cooley P, Tice A. The application of telemedicine technology to a directly observed therapy program for tuberculosis: a pilot project. *Clin Infect Dis* 2001 December 15: 33(12): 2082-4.

2. www.atmeda.org News and resources, links to telemedicine Web sites

3. www.videophonesales.com (Vendor used by Snohomish Health District)

Video DOT: Potential Hours and Cost Savings

Type of encounter	# of visits 1/3/02-1/31/03	Ave. encounter time	Total Mileage 1/3/02-1/31/03	Mileage cost @ \$0.365/mile	Staff salary plus benefits @ \$25.71/hr	Approx. cost per encounter @ \$25.71/hr	Value
VDOT	829	1.5 min/call	0	0	\$ 533	\$ 0.64	\$ 533
Comparable home visit to same households	829	25 min/HV	5,194 mi	\$1,895	\$8,880.70	\$13.00	\$10,776

TB Nurse Case Management Model 2002 for Ensuring Completion of Therapy: Care Practice and Standard Terminology

In TB control, case management is the gold standard for providing quality care for patients and ensuring they complete therapy. It can be performed by a variety of health care staff, including physicians and outreach workers, but is most frequently carried out by nurses. Depending on the patient and his or her needs, case management can be fairly simple or quite complex. Typically, the methods, terms, and tools used by case managers in recording, describing, and evaluating their activities are informal and nonstandardized. As a result, case managers are unable to document their impact on patient completion of therapy (COT). Standardizing the language that describes the work performed by nurse case managers would make the efforts of nurses more visible and improve communication within nursing and with other disciplines.

As a part of a multitask project to address this lack of standardized terms and

procedures for describing the efforts of nurses, a team consisting of public health nursing consultants from CDC, the National TB Controllers Association (NTCA), and the National TB Nurse Consultant Coalition (NTNCC), as well as a CDC evaluation specialist, developed the TB Nurse Case Management Model 2002. The team presented the model in October 2002 at the International Union Against Tuberculosis and Lung Disease (IUATLD) 33rd World Conference on Lung Health. This logic model describes the somewhat unique elements of the TB nurse case management decision-making and care process using standard nursing terms, so that TB nursing practice can be conceived, developed, and implemented using terms and action plans that can be supported and evaluated.

The team used as their framework the Case Management Care Model 2001, a model of TB case management that had been previously developed and presented by two members of the team based on a model of health from Johns Hopkins and which was used for a pilot evaluation of one site's TB nurse case management program. The 2001 model identifies factors that affect the

patient's health: patient characteristics; cues to action (role models, reminders, mandates); causal factors (access to care, health knowledge, past experiences, beliefs, self efficacy); mediators (provider characteristics, system characteristics); and outcomes (completion of therapy). This model suggests categories of factors for nurses to consider.

The 2002 model is a conceptual template from which hands-on tools (e.g., patient encounter forms) will be developed. The model describes, in sections, the decision-making process that TB nurses use in selecting individual-level interventions that support adherence to treatment plans. This decision-making process includes 1) developing assessment profiles of patient needs, 2) tailoring interventions to remove identified barriers, and 3) monitoring patients' outcome indicators with standard data elements.

To develop the 2002 model, the authors first described the elements of an assessment profile of patient needs by identifying the interacting multiple factors that may interfere with the patient's adherence to therapy. The factors may be patient-related, such as conflicting health beliefs, alcohol or drug dependence, or mental illness. They may be provider-related, such as vague provider explanations, or failure to encourage, reassure, and support the patient in the treatment process. Factors may be related to the clinic setting or location, transportation services, the availability of child care, and the hours and availability of interpreters who speak the language. They may be related to the disease severity, which may cause physical and cognitive limitations, loss of belief in the efficacy of treatment, and loss of social services. Factors can also be associated with the TB treatment regimen, which involves a large number of drug treatments in a long, complex therapeutic regimen.¹

In the next section of the model, the team showed how, through patient-tailored interventions, nurses attempt to remove these assessed barriers to treatment adherence. The interventions are most effective when used in combination rather than as single approaches, and should include convenient care, information, counseling, reminders, self-monitoring, reinforcement, family therapy, and supervision and attention (i.e., enhanced DOT).² Tailored interventions should be safe, effective, patient-centered, timely, efficient, and equitable.³ They should be respectful of and responsive to individual patient preferences, needs, and values, and ensure that patient values guide all clinical decisions.

In the final section of the 2002 model, the authors showed how the nurse monitors the case management process and its outcome via indicators concerned with patient health states, behaviors, or perceptions. The indicators yield accurate, meaningful information and enhance understanding of patient barriers and the health care quality, costs, outcomes, and opportunities. Nursing care interventions and their outcomes are the least well documented activities in the existing health care databases.⁴

The standard data elements used in this project are approved and recognized by the American Nurses Association and are described in the following classification guides: the Nursing Outcomes Classification (NOC),⁵ the Nursing Intervention Classification (NIC),⁶ and the Nursing Diagnosis Association (NANDA).⁷ The use of indicator measurement scales (described in the NOC) is a reliable and valid method of measuring the process and outcomes so that the effect of nursing interventions can be examined. A five-point Likert-type scale is used to demonstrate the variability in the patient described by the outcome. The fifth or end-point scale (very strong) reflects the most desirable condition relative to the

outcome.⁵

To describe TB treatment needs and patient factors associated with barriers to COT, the authors used deductive methods to identify nursing diagnoses and intervention activities based on current practice as reflected in TB nursing and treatment documents (8,9). For each patient factor and treatment need, the authors, experts in the fields of TB nurse case management and in evaluation, brainstormed and identified care activities through consensus. Finally, standard terminology was applied.

This work resulted in the two-part Case Management Care Model 2002. This expansion of the 2001 model identifies standard terminology for nursing diagnoses, interventions, and outcomes associated with completion of TB treatment. Selected indicators of the success of an intervention include patient's communication ability, TB knowledge, supporting beliefs for recommended actions, participation in health care decisions, control of disease fear, coping with social relationships and role performance, compliance behavior, engagement in treatment, access to health care, medication response, and well-being. This model helps nurses conduct ongoing evaluation of the impact of selected interventions.

Future project work will include 1) piloting the patient assessment profile and outcome indicator tool for predicting COT barriers and resource needs; 2) identifying standard terminology for selected interventions and activities to remove treatment and care barriers; 3) tracking the quality of recorded data; and 4) evaluating how the theoretical model has been implemented in a field setting.

The standardization of case management practice and terminology will help in expanding nursing knowledge, developing health information systems, determining

costs for nursing services, planning for resource needs, and improving nursing education. The ultimate goal of this process of evaluating and standardizing case management practice and terminology is to improve the outcome of TB patient treatment.

—Submitted by Judy Gibson MSN, RN
Div of TB Elimination

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Tuberculosis Course Chosen as a Model Course

"Tuberculosis," a writing-intensive first-year seminar at Franklin & Marshall College, was chosen by Science Education for New Civic Engagements and Responsibilities (SENCER) as one of four model college courses for 2002 and was presented in August at SENCER's annual summer institute. The course has been taught since 1999 by Dr. Richard Fluck. A description of the model TB course and other models can be found at the following:
<http://www.aacu.org/SENCER/models.cfm>.

SENCER, funded by the National Science Foundation, is a project of the Association of American Colleges and Universities that "connects science and civic engagement by teaching through complex, capacious, and unsolved public issues, such as natural catastrophes, water quality, HIV disease, the Human Genome Project, energy alternatives, and nuclear disarmament" (<http://www.aacu-edu.org/sencer/>). The goal of the SENCER project is to promote and sustain science education reform, particularly general science education. The founding course that helped launch the SENCER initiative was a course titled "Biomedical Issues About AIDS" taught by Monica Devanas at Rutgers University.

The 2002 SENCER institute was attended by more than 200 faculty - some as individuals but most as members of a team

from their home institution - representing 77 colleges and universities. The team from Franklin & Marshall College focused its work at the institute on developing a health policy track within its Public Policy minor. The health policy track, which is currently under development, will include both the first-year biology seminar about TB and a senior public policy seminar about TB.

Other participants at the institute represented the American Association for the Advancement of Science (AAAS), the California Commission on the Status of Women, the National Research Council, and the National Science Foundation. The participants also included faculty and administrators from five universities in Africa - Jomo Kenyatta University of Agriculture, Kenyatta University, Maseno University, Rand Afrikaans University, and Sokoine University of Agriculture - who focused on creating courses that teach science content through HIV/AIDS.

Prior to the August institute, SENCER partnered with AAAS to create a CD of the 40-50 "must-read" papers in the public domain that address HIV/AIDS. In response to this request, the Division of Tuberculosis Elimination sent a number of items, including the "CDC TB Information Guide" CD ROM and several printed items, to SENCER for distribution to the African delegates.

—Submitted by Richard A. Fluck, PhD
Dept. of Biology
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UPDATES FROM THE COMMUNICATIONS AND EDUCATION BRANCH

Duty Officer Assessment at the Division of Tuberculosis Elimination

Each day, health care providers and concerned citizens telephone the Division of Tuberculosis Elimination (DTBE) requesting TB information. DTBE has a duty officer system, which each day designates a different person within the division to answer these calls. During the months of April through July 2001, the DTBE Communications and Education Branch (CEB) conducted an assessment of the duty officer system to identify target audiences and leading information needs of persons contacting DTBE duty officers.

Approximately 450 calls were received during the assessment period, with duty officers reporting 6 to 15 calls per day. Time spent on each call ranged from 1 to 90 minutes, averaging 11.2 minutes. The assessment results showed that the majority of callers to the duty officer line were health care providers (53%), followed by the general public (15%). A number of calls were also received from administrators (11%), patients (6%), and students (2%).

The most common topic of duty officer calls was skin testing (41%). Questions on skin testing covered the following areas (not mutually exclusive):

- C Skin testing in health care facilities
- C Follow-up of skin test with chest x-ray
- C Two-step testing
- C Reading/interpreting skin test
- C Skin testing in special populations
- C Administering skin test
- C Other disease/treatment complicating skin test
- C Annual skin testing in health care facilities
- C Specific materials request
- C Frequency of skin tests

Other common topics of duty officer calls included infection control (22%) and treatment guidelines (14%).

The DTBE will use the results of this needs

assessment to ensure that development and updates of educational materials address common questions asked by callers. Assessment of information/education services such as the duty officer system yields valuable information and must be performed periodically to identify information needs and gaps in educational materials.

—Reported by Betsy Carter, MPH, CHES
Div of TB Elimination

To the Point! Academic Detailing in Action

CDC's Division of Tuberculosis Elimination is investigating ways of increasing private health care providers' use of targeted testing and treatment of latent TB infection (LTBI) in their patients. The goal of the project *To the Point! Academic Detailing in Action* is to provide state and local TB control program personnel with the tools to develop, implement, and evaluate academic detailing strategies targeting private health care providers.

Modeled on the visits of pharmaceutical representatives to physicians' offices, academic detailing has been demonstrated to be effective in conveying concise, practical health information. In 15 minutes, a detailer conveys no more than three points, while giving the health care provider an opportunity to ask questions. Formative research was conducted with providers and patients to test the content of provider and patient educational materials on LTBI. These materials are part of a step-by-step guide to TB academic detailing.

The pilot project trained 10 individuals in the use of academic detailing methods during a 6-hour training session held on August 23, 2002, in Decatur, Georgia. These trained academic detailers will contact physicians and other health care providers in their

regions and teach them to assess the risk and test patients for latent TB.

Five of the participants were Georgia District TB Coordinators. They coordinate TB activities in their districts, provide education, and oversee case management. State TB nurses made up the other half of the training group. These coordinators and nurses primarily oversee other colleagues and programs. The districts for which these individuals are responsible represent the whole state of Georgia, a mix of counties that can be characterized as mostly rural.

Drs. Donna Richter and Donna Rhoades taught and cofacilitated the training session. Dr. Richter is the Chair of the Department of Health Promotion, Education, and Behavior in the Norman J. Arnold School of Public Health at the University of South Carolina. Dr. Rhoades is a private consultant. Both have advanced degrees in education and are experienced in teaching techniques. Drs. Richter and Rhoades employed an interactive, experiential style using slides, video, printed materials, and flip charts in the training course.

Conference evaluations

Participants gave overall high scores to the training session. Breakdowns of the specific areas that were evaluated are included below.

Training evaluation. Participants used a 7-point Likert scale to rate the overall training, addressing such topics as objectives, materials, content, methods, teaching style, and learning environment. Higher scores indicated a more positive response. Mean scores ranged from 5.5 to 6.4, with the total mean being 6.0, "mostly agree."

Training self-confidence. Participants rated the level of confidence they felt in their ability to use the training materials effectively, using a four-item scale. All participants except one were confident of

their ability to handle the training materials. The trainees' scores ranged from 17 to 28, with 28 (the highest possible score) indicating that a person felt the highest amount of confidence in handling the training materials well.

Receptivity to training. Participants' receptivity to the training was measured by a five-item scale. The highest possible score was 35 and the lowest possible score was 5. Trainee scale scores ranged from 20 to 35. Most participants appeared to be receptive to the training, with only two trainees scoring 25 or less.

Readiness to transfer. Participants also rated how likely they were to use the skills learned at the training workshop by choosing the statement that best summarized his or her action upon returning to their work setting, using a 5-stage scale. Of those who answered the question, all were in the highest levels of change: two thirds (66%) were in the "maintenance" stage of change (stage 5) and one third (33%) were in the "action" stage (stage 4).

Attitude toward training. Participants revealed their reactions toward the application of academic detailer training knowledge and skills. The highest possible score was a 42, with high scores indicating a more positive reaction toward using the detailer knowledge and skills. Participant scores ranged from 25 to 42, with the mean scale score being 37.2.

Autonomy. Participants rated themselves as having a high level of autonomy at work. Possible scale scores could range from 4 to 28 with the higher score indicating more autonomy. Their scores ranged from 22 to 28, with a mean score of 25.3.

Academic detailer skills. Participants also rated how frequently they performed skills related to academic detailing with public and private health care providers and how

confident they were in their ability to perform each of these skills. Relevant skills included the following:

- C Travel to office of a health care provider
- C Collaborate with a health care provider
- C Identify a health care provider who would benefit from TB message
- C Make an appointment with a health care provider to present TB message
- C Present a targeted TB message to the health care provider.

The following skills were also assessed for how frequently they were performed and the participants' confidence in their ability to perform them:

- C Goal setting and achievement
- C Ability to deal with challenging and difficult healthcare providers when presenting a TB message

The academic detailer training participants consistently reported higher scores on both frequency and confidence with public health care providers than with private providers, and "confidence" scores generally were higher than "frequency" scores.

Although trainees were fairly confident in their ability to perform Academic Detailer skills, their confidence levels were slightly lower in relation to "identifying private providers," "traveling to the office of a private provider," and "making an appointment with a private provider."

Next steps

Overall, most of the participants agreed that the Academic Detailer Training Conference was completed successfully. The consistently high scores on all the subscales portray this group as confident and empowered to carry out academic detailing tasks. Although as a group they work more frequently with public health care providers and are more confident with this group, they see themselves as up to the challenge of

completing a pilot project with private healthcare providers. The goal is for each participant to now go out and present the information in an academic detailing session to 3 to 5 physicians.

To reinforce the information that was relayed during the academic detailing session, a follow-up session will be scheduled. Follow-up helps ensure the provider's retention of the primary messages delivered during the academic detailing session as well as enhance the provider's awareness of the problems related to TB testing and treatment.

An evaluation of the initial academic detailing session and the follow-up session will be conducted. Both the TB control program detailer and the provider will evaluate the session and materials. These evaluations will be used to further refine the training course and materials. The project should be completed by the end of June 2003. The *To the Point! Academic Detailing in Action* materials should be available to TB control programs later in the fall of 2003.

—Reported by Scott McCoy
Div of TB Elimination

New Mantoux Tuberculin Skin Test (TST) Training Products Available

Requests from the field and information gathered through key informant interviews identified the need for updating and revising current TST materials. A project was started to develop new and revise current Mantoux TST training materials. In February 2002, a calibrated Mantoux TST ruler was produced and made available as part of this project.

A "Mantoux Tuberculin Skin Test Training Materials Kit" is now available which includes a videotape and a facilitator guide. The target audience is health care workers who administer and read tuberculin skin tests. The goal of the videotape is to increase and

reinforce knowledge about and skills in administering and reading the Mantoux tuberculin skin test. The videotape is approximately 30 minutes long. The facilitator guide includes a transcript of the videotape, and notations for facilitators who use the videotape for skin test training.

Using both internal and external working groups for formative evaluation, these materials have been developed and reviewed by health care staff with extensive TST experience. An external working group was convened to provide practice related comments from the field. The external working group consisted of health educators, nurses, public health advisors, administrators, and others. The internal working group made up of CDC staff was convened to review the products as they were developed.

To order the Mantoux Tuberculin Skin Test Training Materials Kit or ruler:

- C Place an order through DTBE's online ordering system: www.cdc.gov/tb; or
- C Mail or fax the enclosed DTBE Educational and Training Materials Order Form; or
- C Call the CDC Voice and Fax Information System toll free: 1-888-232-3228, then select 2, 5, 1, 2, 2 and request order #00-5457 for the materials kit or #99-7047 for the ruler.

—Reported by Gaby Benenson, MPH
Div of TB Elimination

UPDATE FROM THE INTERNATIONAL ACTIVITY

New International Efforts in Childhood TB

On October 6-7, 2002, a "Workshop on Tuberculosis in Children" was held to assess research priorities in childhood TB in conjunction with the International Union Against TB and Lung Disease (IUATLD) annual conference. Participants included approximately 40 researchers from the International Pediatric Association (IPA), CDC, the World Health Organization (WHO), the US Agency for International Development (USAID), the National Institutes of Health (NIH), the National Institute of Allergy and Infectious Diseases (NIAID), the Fogarty International Center, the National Institute of Child Health and Disability (NICHD), academic institutions, and national TB programs from a number of countries in Sub-Saharan Africa, Asia, Latin America, and Eastern Europe. The goals of the conference were to highlight current gaps in knowledge about childhood TB, to assess research opportunities, and to begin to establish working partnerships and identify funding sources.

Data on the epidemiology of childhood TB are limited. In 1989, WHO estimated that there were 1.3 million annual cases and 450,000 deaths due to TB among children less than 15 years of age. More recent estimates of the burden of childhood TB have been difficult to obtain. Currently, WHO requests data from member countries about TB cases by age only for smear-positive cases. Since approximately 95% of children less than 12 years of age with TB disease are smear-negative, these published estimates greatly underestimate the burden of TB in this population. To begin to understand the burden of disease in children, more accurate estimates are needed. Plans are underway with WHO to

consider expanding TB case notification practices for persons <15 years of age to address the current limitations on pediatric TB case information. This would greatly enhance the knowledge and understanding of global pediatric TB epidemiology.

Clinical research regarding childhood TB is also limited by the lack of a standard case definition. Generally, a diagnosis of TB in a child rests on epidemiologic and clinical information, chest radiograph, and rarely, bacteriologic confirmation. Consensus is needed on a clinical definition of childhood TB for use in research and program activities. Improved diagnostic tests for children represents a critical area for future research. Participants agreed that collaborative research is needed to study optimal case definitions and assess new diagnostic techniques in different settings.

Operational research is also needed to assess how well current worldwide strategies for directly observed treatment, short course (DOTS) are working to include children. Limited published data suggest that treatment outcomes are poor and default rates unacceptably high in low-income countries. Few countries have formal guidelines for the treatment of childhood TB, and programmatic activities such as contact tracing and treatment of latent infection are often not done in resource-poor settings. Additional research priorities identified during the conference included understanding the immune response of children to TB infection and disease and understanding the interaction of TB and HIV in children. Participants agreed that operational research using existing program data, as well as research on the immunology of childhood TB, and the relationship between TB and HIV infection in children are key areas for future research.

Participants from the conference will work to try to establish a Pediatric TB Subgroup under the Stop-TB Partnership to serve as a

forum to move these initiatives forward. Priorities include expanded worldwide reporting of childhood TB cases, development of a working case definition, and the establishment of a pediatric TB research network.

This conference represents a first step to understanding the burden of childhood TB worldwide and renewing efforts to undertake research and program activities to reduce this burden.

—Reported by Lisa Nelson, MD, MPH, MS
Div of TB Elimination

UPDATES FROM THE RESEARCH AND EVALUATION BRANCH

Incorporating HIV Counseling, Testing, and Referral into TB Contact Investigations

HIV-infected persons have the greatest risk of developing active TB after contact with infectious TB patients. However, a recent 11-site US study found that less than 15% of close contacts had HIV status recorded in their clinic charts and that nearly 25% of known HIV-infected contacts were not screened completely for active TB according to CDC recommendations.¹ Moreover, only one third of known HIV-infected contacts started LTBI treatment, with only half of them completing. In response to these findings, CDC issued a request for task order submission through the TB Epidemiologic Studies Consortium (TBESC) in January 2002 to develop methods of incorporating HIV counseling, testing, and referral (CTR) into TB contact investigations. In late June, the task order was awarded to the New York City Department of Health and Mental Hygiene for a period of 18 months.

In 2000, 9% of TB patients in the United

States were HIV positive.² In New York City, 18% of all TB patients were known to be HIV infected.³ However, of those tested for HIV (approximately 66% of patients), 29% were HIV positive. Contacts to HIV-infected TB patients are more likely to be HIV infected because they include children and sex and drug-using partners. CDC's Revised Guidelines for HIV Counseling, Testing, and Referral⁴ define a high HIV-prevalence setting as one in which the client population has a prevalence of greater than or equal to 1%. In the previously mentioned 11-site US study of contact investigations, HIV prevalence among all 6,225 close contacts was approximately 2%.¹ Among only those contacts with known HIV status, the prevalence was 13%. These data demonstrate that TB contacts, as well as TB patients, are at high risk for HIV and should receive HIV counseling, testing, and referral.

Identifying HIV-infected contacts allows providers to potentially prevent the development of active TB through LTBI treatment and to link HIV-infected persons to care that will prevent the development of other AIDS opportunistic illnesses. By implementing the project in the Manhattan Borough of New York City, Task Order Number 4 aims to 1) improve HIV counseling, testing, and referral of close contacts to infectious TB patients, 2) promptly identify active TB in HIV-infected close contacts, 3) prevent active TB development through the initiation (regardless of TST results) and completion of LTBI treatment in HIV-infected contacts once active TB has been excluded, and 4) prevent AIDS in HIV-infected contacts through referrals to HIV care.

Project objectives are to offer HIV CTR services to all close contacts identified by infectious TB patients in Manhattan, and to have 50% of close contacts receive HIV testing by the end of the project period. For HIV-positive close contacts, all will be screened for active TB and referred for HIV

care and supportive services. It is expected that at least 80% of HIV-positive close contacts will receive such services. In addition, all HIV-infected close contacts who do not have active TB will be offered LTBI treatment, and 70% of those starting are expected to complete it.

Project activities started at the end of November 2002. Dr. Jiehui Li is the New York City Project Officer and Suzanne Marks is the CDC Technical Monitor for Task Order Number 4. Dr. Li has been diligently working with staff in the Manhattan Network to develop implementation and monitoring procedures that are feasible and coordinated with other TB activities. Carla Clark, as the data programmer, has been developing data monitoring and reporting mechanisms. Other project staff are currently being hired. Cynthia Driver, Director of the Epidemiology Unit, and Sonal Munsiff, Director of the New York City Bureau of TB Control, will also contribute time as project staff and as representatives for the TBESC.

—Reported by Suzanne Marks, MPH, MA
Div of TB Elimination

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Update on the TB Trials Consortium

CDC's TB Trials Consortium (TBTC) has experienced several significant events over the past several months.

1. The primary report of results from USPHS/TBTC Study 22 appeared in *The Lancet* in August (*Lancet* 2002; 360:528-534), presenting results among HIV-negative patients treated with a once-weekly isoniazid/rifapentine regimen. While results overall were not satisfactory, it was possible to identify a subgroup of patients in whom the once-weekly regimen appeared to perform quite well. The new ATS/CDC/IDSA treatment guidelines, published in the *American Journal of Respiratory and Critical Care Medicine* in February 2003 (see cover letter for citation) reflect these results in allowing consideration of this regimen in appropriate, low-risk HIV-negative TB patients. Use of this regimen is expected to be helpful in multiple situations; for example, the regimen is quite attractive for patients who are employed and must miss work for DOT.

2. The primary report from USPHS/TBTC Study 25, a dose-ranging study of two doses of rifapentine as part of TB therapy, was published in June in the *American Journal of Respiratory and Critical Care Medicine* (*Am J Resp Crit Care Med* 2002; 165:1526-1530). This study provided important data to support the choice of dose in subsequent trials. Based on results from this study, the 900-mg rifapentine dose is being evaluated in Study 26 (see below).

3. The TB Trials Consortium held its annual Scientific Advisory Group of Experts (SAGE) meeting in Atlanta on September 13, 2002. The SAGE meeting provides a review of all TBTC activities for the senior scientific staff of DTBE, and is programmed to occur each year just prior to the annual round of budget decisions. Review of the TBTC work plan and prior year accomplishments provides

the needed background for senior managers to judge the appropriateness of budget requests, and equally importantly provides an opportunity for interaction and feedback between consortium and divisional programmatic leadership.

Among the points of note at this year's meeting was the announcement of the results of both internal and external recompetitions, as listed below:

Seven-year increases were awarded to four existing sites:

- C University of North Texas, which will begin a collaboration with the Dallas County TB Control Program;
- C University of Southern California/LA County, which plans to expand its existing collaboration with Los Angeles County TB Control;
- C Columbia University, which will expand a highly successful collaboration with the New York City Department of Health; and,
- C The San Antonio VA Medical Center, which will expand collaborations with multiple sites in its area. These sites include the Wilford Hall Medical Center and several TB clinics in southwestern Texas. In addition, the award will assist the San Antonio VAMC site to solidify its roles as the laboratory coordinator for the TBTC NAA Study and as a leading site in enrollment into pharmacokinetic studies.

Seven-year awards were also made to three new external sites:

- C Emory University in Atlanta, GA (the principal investigator is Dr. Susan Ray), which will be collaborating with the TB Control Programs in both Fulton and DeKalb Counties;
- C University of California at San Diego (the principal investigator is Dr. Antonino Catanzaro), who will collaborate with the San Diego County TB Control Program; and,
- C The Federal University of Rio de Janeiro

in Brazil (the principal investigator in Brazil is Dr. Afranio Kritski), collaborating with the existing TBTC site at Johns Hopkins University in Baltimore.

This is the TBTC's first site outside North America, and thus represents a major new undertaking for the consortium. It is expected that the Brazil site will focus initially on participation in Study 26 (once-weekly treatment of LTBI).

4. The semi-annual TBTC meeting took place in Montreal, Canada, on October 4-5, 2002. Representatives of all new sites were in attendance. Major communications and events included the following:

a. Adoption of a new major study, Study 27, a Phase 2 trial studying the impact of substituting moxifloxacin for ethambutol in the initial 2 months of TB therapy. The study will be double-blind and placebo-masked. Approximately one third of the patients are expected to be enrolled at the Kampala, Uganda, site of Case Western Reserve University's TB Research Unit, through a collaboration between TBTC and Case Western. The manufacturer of moxifloxacin, Bayer Pharmaceuticals, has contributed substantially to the trial's design and support.

b. TBTC Study 26, the consortium's flagship trial of a once-weekly, 12-dose INH / rifapentine regimen for treatment of LTBI, continues to enroll patients. Almost 1,000 patients were enrolled in the first year, and the inclusion of new sites offers hope that enrollment will continue to increase. With a projected sample size of almost 8,000, Study 26 is an ambitious undertaking whose results could have substantial impact on the drive to eliminate TB.

c. Prof. Denis Mitchison, formerly of the British Medical Research Council's TB Unit, was an invited speaker at this fall's meeting. Prof. Mitchison shared new data on the potential impact of fluoroquinolones in TB

therapy and on the mechanisms of action of pyrazinamide.

d. Efforts are underway to establish a centralized IRB process that will help both TBTC and the TB Epi Studies Consortium simplify their activities related to human subject protections. This effort is modeled on the successful pilot effort of the National Cancer Institute, and promises to improve efficiency while preserving robust human subject protections. The project has won approval from OHRP, and is being guided by Drs. Dolly Katz and Naomi Bock.

5. The following staffing changes have taken place: Dr. Naomi Bock has transferred to the Division of HIV/AIDS Prevention in the National Center for HIV, STD, and TB Prevention (NCHSTP). Dr. Andrew Vernon has left his position in DTBE's Research and Evaluation Branch as the overall coordinator of the TB Trials Consortium to become the Associate Director for Science for NCHSTP. Despite these departures, Drs. Bock and Vernon will maintain affiliations with the TBTC, assisting in selected studies and TBTC functions. Dr. Phil Spradling, who had worked in DTBE's Surveillance and Epidemiology Branch before leaving for another position in CDC, returned to DTBE to replace Dr. Naomi Bock in the TBTC.

—Reported by Andrew Vernon, MD, MHS
Div of TB Elimination

UPDATES FROM THE SURVEILLANCE AND EPIDEMIOLOGY BRANCH

Update on Rifampin and Pyrazinamide (RZ) Treatment for LTBI Patient Cohort Investigation

From October 2000 through December 2002, a total of 44 cases of severe liver injury associated with treatment of latent TB

infection (LTBI) with the drug combination rifampin and pyrazinamide (RZ) were reported to DTBE, of which 10 were fatal. A case was defined as liver injury in a person who was taking RZ for LTBI and was hospitalized or died.^{1,2,4}

On August 31, 2001, DTBE issued new guidance regarding RZ, indicating that the 9-month regimen of isoniazid (INH) is preferred for treating LTBI in patients who have indications for treatment, and that 4 months of daily rifampin is an acceptable alternative.^{1,3} Daily RZ regimens for 2 months or twice-weekly RZ regimens for 2 or 3 months should be used with caution, especially in patients taking other medications associated with liver injury, and in those with alcoholism, even if alcohol is discontinued during treatment. RZ is not recommended for persons with underlying liver disease, or for those who have had INH-associated liver injury. If RZ is prescribed, evaluation of patients should include symptom screening as well as tests of serum aminotransferase (AT) and bilirubin at baseline and at 2, 4, and 6 weeks of treatment. No more than a 2-week supply of RZ should be dispensed at a time (with a pyrazinamide dose of ≤ 20 mg/kg/d and a maximum of 2 gm/d).^{1,4} Since publication of the new recommendations, CDC has received no reports of deaths in patients undergoing RZ therapy.

In order to determine an estimate of the incidence rate of severe liver injury in persons receiving RZ, and to determine the presence of factors associated with adverse effects due to RZ, DTBE is currently investigating cohorts of patients who received this regimen. In December 2001, a short questionnaire was e-mailed to state and city TB controllers to identify programs and providers prescribing RZ. In February 2002, follow-up phone calls were made to the programs and providers using RZ to confirm its use. TB controllers from all 50 states completed the e-mail questionnaire;

41 (82%) states reported RZ use. Cohorts include patients from TB clinics, correctional facilities, and homeless shelters.

On September 24, 2002, a four-page RZ Patient Cohort Enumeration survey was mailed to 139 health care providers identified as prescribers of RZ, asking for general characteristics of cohorts; no patient-specific data are being collected. Survey questions included number of patients who were eligible for treatment of LTBI; number who initiated RZ therapy; number who stopped RZ because of elevated serum AT, symptoms of hepatitis, or other adverse effects; number who completed RZ therapy; and number taking RZ who were hospitalized or died with liver injury. The survey also inquired about reasons for RZ use and frequency of serum AT monitoring.

Through December 2002, only 59 (42%) of these surveys have been received. DTBE continues to contact health care providers who have not yet responded to the survey. We request that those who received the survey and have not yet responded please do so as soon as possible, but no later than February 28, 2003. Data collected from these surveys are crucial to estimating the incidence of severe liver injury associated with the use of RZ for treatment of LTBI. Analysis of the survey data will help CDC formulate future recommendations related to the use of this regimen.

DTBE encourages providers to report possible cases of severe liver injury associated with RZ or any regimen for treatment of LTBI to DTBE at (404) 639-8442. You may also call this number if you have questions about the Patient Cohort Enumeration survey. Possible cases of severe liver injury should also be reported to the state health department or local TB control program.

—Reported by Lauren A. Lambert, MPH
Div of TB Elimination

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The Biotechnology Engagement Program

Background. The Biotechnology Engagement Program (BTEP) is a U.S. government initiative which is designed to form partnerships between U.S. scientists and former Soviet Union (FSU) bioweapons specialists. The U.S. government continues to be deeply concerned about the risk of proliferation of weapons of mass destruction and the ease with which former Soviet expertise in bioweapons development could be transferred to rogue states and terrorists. To address these concerns, HHS has agreed to work with the Department of State and the Department of Defense in efforts to redirect this expertise (and resources) from military to civilian research. BTEP provides

funding for cooperative research projects, with the objective of encouraging former Soviet bioweapons scientists (also known as biodefense workers or BDWs) to stay in their home state and develop new civilian-oriented research skills. It is hoped that this work will eventually help to develop and expand commercial production of drugs, vaccines, biologic test kits, and other quality products and technologies designed to meet current public health needs in Russia and the region.

BTEP provides 12 to 36 months of financial support to the research collaborators. The program encourages joint teams of former Soviet BDWs and U.S. experts to apply for support and cooperation in areas of research and development that address urgent public health concerns in Russia and the northern Eurasian region. The primary source of proposed projects is through matchmaking and targeted requests for applications.

Armenia/Georgia BTEP Project.

Independent since 1991, the Republic of Armenia experienced a three-fold increase in TB morbidity, from 282 reported case-patients in 1991 (14 of whom were children) to 896 reported case-patients in 2001 (38 of whom were children). These data come from Armenia's Sanitary Epidemiologic Services (SES). The sharp rise in TB cases among children is of grave concern and indicates significant ongoing transmission of TB disease in Armenia. However, there are disparities in the epidemiologic data because Armenia has two independent TB reporting systems: the SES and the TB hospitals. The TB hospital data show an even greater number of overall TB case-patients, from 724 reported in 1991 to 1343 reported in 2001. Concomitant with this increase in absolute numbers of TB case-patients in the past 10 years was a dramatic drop in the population from about 3.8 million in 1991 to about 2.5 million in 2001, owing in large part to emigration to other countries (e.g., Russia

and the United States). But despite this drop, the 1991 demographic data are still used to calculate the official Armenian Ministry of Health (AMOH) TB rates, which are clearly understated. Further, the rise in drug-resistant *M. tuberculosis* has reached significant levels; 20%-25% of all *M. tuberculosis* isolates are resistant to at least one antibiotic. The exact levels of drug-resistant TB are difficult to ascertain because of the paper-based system of laboratory information at the Armenian National TB Reference Laboratory. AMOH officials attribute rising drug-resistant TB rates to poor compliance and follow-up of diagnosed TB case-patients and the increasing incidence of TB in the prison system.

Consistent with World Health Organization (WHO) recommendations, the AMOH plans to determine the incidence of drug-resistant TB and to assess the current TB program activities in order to conceive, develop, and implement a National Armenia TB Program (NATBP). This NATBP would include a comprehensive reorganization and decentralization of local TB control services and activities to account for DOTS implementation. It would also include the strengthening, unification, and computerization of all TB case-patient management, laboratory, epidemiologic and investigative, and reporting activities. Finally, the NATBP would include a new national TB training program for postgraduate medical officers and advanced laboratory training in the latest laboratory techniques.

If successful, this BTEP proposal would finance the applied research and program assessment necessary to conceive, develop, and implement the first phases of the NATBP. This proposal also includes a regional collaboration with the Ministry of Health, Republic of Georgia TB Program. This collaboration would include funding for additional support for the Republic of Georgia TB Program and for regional TB

conferences, workshops, and joint training activities.

There are currently two BTEP projects underway in the division, the one described above and another in Russia. The second project will be described in the next issue of *TB Notes*.

—Reported by Scott J.N. McNabb, Ph.D., M.S.
Div of Tuberculosis Elimination

TRAINING AND EDUCATIONAL MATERIALS

The New Jersey Medical School National Tuberculosis Center has several new and revised products available for distribution:

Identifying Missed Opportunities for Preventing TB - This booklet will assist health department TB programs document the extent to which their TB cases could have been prevented. Through the use of a Prior History Intake Form, the TB Case Manager can specifically identify providers who served the patient up to the TB diagnosis and points at which the provider failed to carry out TB testing and treatment recommendations. The product includes guidelines for completing the form, data analysis, and translating data into action.

Designing a Tuberculosis Standardized Patient Program for Medical Students (revised 2002) - A Standardized Patient (SP) is an individual trained to portray a specific patient and to interact with the health care professional/worker as a patient. This manual provides TB SP scenarios designed to teach history taking, patient education, medical follow-up, and working with an interpreter. The resource includes the methodology for providing this type of training as well as the tools required for implementation.

Guidelines for Initiating a School-Based

DOT Program (revised 2002) - These guidelines provide direction to a health department for implementing school-based DOT for TB infection and disease. It outlines the advantages of school-based DOT, procedures for setting up a DOT program, follow-up with school nurses, planning for DOT outside of school, continuing a collaborative relationship between schools and TB programs, and continuous quality improvement.

Guidelines for the Diagnosis of Latent Tuberculosis Infection for the 21st Century - This CME-certified monograph discusses targeted tuberculin skin testing for latent TB infection as a strategic component of TB control. Based on a symposium held in January 2002, this resource addresses how to administer, read, and interpret the tuberculin skin test and its specificity and sensitivity.

All products are available on the Center's Web site at <http://www.umdjedu/ntbcweb> or you may order items by phone at 973-972-0979.

—Reported by Rajita R. Bhavaraju, MPH, CHES
Acting Program Director, Education and Training
New Jersey Medical School National TB Center

NEW CDC PUBLICATIONS

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PERSONNEL NOTES

Gustavo Aquino was selected for a 2-year post as Technical Advisor for Tuberculosis Control assigned to the U.S. Agency for International Development (USAID) Health Division stationed in Moscow, Russia. Gus reported to his new assignment in November 2002. He is providing oversight for CDC program activities in the area of TB control, disease surveillance, and the transmission of infectious diseases. His primary responsibility is the management and implementation of all CDC's TB prevention and control strategies and programs in Russia. Gus has been the lead TB public health advisor for Russia since May 21, 2000, in the International Activity unit of DTBE. Gus began his public health career with CDC in 1990 while assigned to the Sexually Transmitted Disease (STD) Program in Miami, Florida, and later

transferred to the Chicago STD Program to assist with field training of newly hired outreach workers. He started his TB career in New York City in 1993, where he was involved in numerous local activities related to program implementation and evaluation, DOT, and assisting with the supervision and training of new TB reps. He was later assigned to the New Jersey State TB Control Program where he worked closely with the National TB Model Center and assisted in monitoring statewide activities. Consequently, he was assigned to the Puerto Rico Department of Health, where he served as the TB program advisor for several years. His management skills contributed toward program progress and success in updating and coordinating island-wide TB policies relating to surveillance, case reporting, case management, directly observed therapy (DOT), contact investigations, and screening.

Sharlene Broadnax came to CDC in February 1999 from the Environmental Protection Agency (EPA) where she worked for 12 years as a Legal Clerk and was later promoted to Legal Technician. At CDC Sharlene first worked as the Lead Program Operations Assistant for the Research and Evaluation Branch and the TB Trials Consortium, providing administrative support to the Therapeutics & Diagnostics and Prevention Effectiveness sections as well as other branch personnel. Sharlene was promoted in October 2002 to the position of Management and Program Analyst. She acts as the point of contact for the branch and assists the Program Information Specialist with personnel and budget activities.

Crystal Carter worked as a Data Entry Clerk with the Research and Evaluation Branch as a full-time contractor with TRW beginning in October 1998. Her initial duties involved entering data and requesting edits on several clinical trial research studies, maintaining files, and verifying data on case report forms. Crystal's data entry duties were

switched from initial data entry to verification on all TBTC active studies. Crystal works primarily with the TBTC Trials Consortium Data Coordinating Center, and works as well with the Therapeutics & Diagnostic Section. Crystal was hired as a full-time CDC employee in November 2002 in the position of Program Operations Assistant.

Vincent Fears has accepted a promotion to the TB public health advisor position in Chicago, Illinois. His effective date was December 1, 2002. In his new position, Vincent will be responsible for coordinating TB case/contact investigation activities conducted by program staff and partner agencies, and will be responsible for a number of other programmatic activities as well. Vincent joined DTBE in January 2001, and was assigned to the Chicago program as a field investigator, learning the basics of TB control and program protocols. Vincent transferred to DTBE from the Division of Sexually Transmitted Disease Prevention (DSTDTP) where he was last assigned to the Baton Rouge, Louisiana, program. Vincent had previous DSTDTP assignments in West Palm Beach, Florida, and Cleveland, Ohio. He is a 1991 graduate of Alabama State University with a bachelor of science degree in biology.

Darryl Hardge was recently selected as the senior public health advisor for Washington, DC. His official start date is February 26. Darryl has most recently been the Program Consultant responsible for providing consultation assistance to Missouri, Kansas, Iowa, Nebraska, South Dakota, North Dakota, and Minnesota. Darryl came to work for CDC in May 1991 as a public health associate I in the Division of Sexually Transmitted Disease Prevention assigned to the Division's Disease Intervention Specialist (DIS) training center in Decatur, Georgia. In 1992 Darryl was reassigned to Milwaukee, Wisconsin, as a DIS working in high-morbidity areas. From January until February 1996, he had a temporary duty assignment

in Baltimore, assisting the STD program with an outbreak. In 1996 Darryl became a lead worker supervising six DIS staff. In October 1997, Darryl joined DTBE with a promotion and was assigned to the Louisiana TB program under the supervision of Scott Jones, our senior PHA and administrator of the program. In November 1998, when Scott Jones was reassigned to DTBE headquarters as a program consultant, Darryl assumed a number of Scott's duties in the interim. During that time Darryl was again promoted. In May 1999, Darryl was assigned to the Baltimore TB program as the program manager. During this assignment, Darryl lead the program through two large and difficult outbreaks. Recently, Darryl has been on a temporary duty assignment in Washington, DC, helping with CDC's effort to respond to the anthrax attacks.

Daryl Hillman joined DTBE in the Computer and Statistics Branch on October 7, 2002, as the lead Network Engineer for the division. Before coming to CDC, Daryl worked as a Network Engineer at Motorola, Inc., also here in Atlanta. As the lead Network Engineer for DTBE, Daryl has the duties of leading the other DTBE LAN administrators and is in charge of the DTBE network infrastructure. Daryl graduated from Clayton State University and Lanier Technical College, both in Georgia, and is certified in the use of Cisco, Microsoft, A+, IBM, Dell, and HP.

Heather Joseph, MPH, has been selected for the Health Scientist position in the Prevention Effectiveness Section (PES), Research and Evaluation Branch, DTBE, and officially started her new position on January 13, 2003. Heather joined PES in August 2001 as an ASPH Fellow, and has been instrumental in working on an ethnographic study of foreign-born persons' perceptions of TB and a focus group study of health care workers' adherence to TST and treatment of LTBI recommendations.

She has also been involved in the development and implementation of the program evaluation training course, and has been an active member of the Division's Evaluation Unit. In her new position, Heather will be working on several new health services research and evaluation projects. Heather has a BA degree in anthropology from Eckerd College, and an MPH degree in epidemiology from Tulane University. Previously, she served as a Rotary Ambassadorial Fellow in New Delhi, India, and studied at the Center for Social Medicine and Community Health at Jawaharlal Nehru University; worked on a state-wide public health strategic plan for the Louisiana Turning Point Program; and participated in an evaluation of a community-based, access-to-care initiative in New Orleans.

Gloria Kelly retired on January 3, 2003, after 34 years of federal government service, including 32 years at CDC. Gloria began her career with CDC in 1970 in what was then the Tuberculosis Branch, Bureau of State Services. From 1973 to 1985, using her talent for assessing and ensuring data quality and a keen sense of attention to detail, Gloria played pivotal roles in historic national studies examining the limitations and interpretation of the tuberculin skin test, describing anti-TB drug resistance trends, and contrasting the efficacy of varying durations of isoniazid therapy for the treatment of latent TB infection. During the early 1980s, she played an instrumental role in the team orchestrating the transition of the national TB surveillance system from collecting aggregate-level to individual-level data for the approximately 25,000 TB cases reported annually in the United States. Subsequently, during 1985-1993, Gloria led the data management team responsible for collating, processing, and providing quality assurance for the hard copy reports submitted by the 50 states, translating the data into an electronic format for analysis, and production of timely and accurate annual surveillance reports. During this period,

Gloria co-authored multiple articles published in peer-reviewed journals on major trends in TB epidemiology. During the past decade, since the national TB surveillance system transitioned to electronic reporting, Gloria was the lead for producing all official statistics from the system, including production of the annual surveillance report, development and implementation of the Public Use Data Set, and preparation of responses to data requests of the system. Her continued enthusiasm for maintaining a high quality product and incorporating enhancements led to major improvements in the annual report, including the most recent additions of detailed information by country of birth and trend tables by major demographic and clinical characteristics. Over the years, she received numerous awards for the high quality of her work. Recently, she received a Special Act Award for designing and producing a special Web-based version of the annual surveillance report in collaboration with the Division Web team, translating more than 40 tables to meet the requirements of new federal standards for accessibility for persons with disabilities. Gloria's career is notable for remarkable career progression and critical roles in managing and analyzing data responsible for major advances in knowledge of TB epidemiology in the United States. Though these contributions to TB statistics and epidemiology are recognized as substantial, Gloria's dedication to excellence and service and her strong work ethic win equal admiration by her colleagues. Her colleagues will sincerely miss the opportunity to clarify changes and analytic approaches used by the surveillance system over the past several decades by just stopping by her office. It is doubtful that retirement will be all rest and relaxation. Gloria has an active life that includes spending time with her daughters and granddaughters, supervising ushers for Atlanta Braves games, and playing recreational tennis. Her DTBE colleagues wish her the best for new adventures and

new joys in retirement.

Stuart McMullen has accepted the position of senior public health advisor in Los Angeles, California. Stuart has been with CDC since 1989 when he began his career with the Sexually Transmitted Disease (STD) program in Miami, Florida. His next two assignments were with the STD program in Philadelphia (1991-92) and Los Angeles (1992-93). In June 1993, during his assignment in Los Angeles, Stuart joined DTBE. His tenure in LA found him working with high-risk populations, quality assurance reviews, reporting requirements, and the multidrug resistance (MDR) program. He managed the Satellite TB Clinic Food and Housing Homeless Incentive Program, developed database systems, developed incentive programs, and carried out numerous other activities in LA. In 1996 Stuart was promoted to senior public health advisor in the California Department of Health Services, TB Control Branch, in Berkeley, California. Stuart began an assignment at headquarters with the Field Services Branch (FSB) in November 2001, after his temporary duty assignment to the Global AIDS Program. During this assignment Stuart provided leadership in the development of an electronic Class A/B TB notification system through a collaborative effort with the Division of Global Migration and Quarantine, and initiated the development of performance indicators for the evaluation of the Class A/B TB notification and follow-up evaluation process, and annual report tables. Stuart also provided leadership initiating a project to develop a core patient management system, working with the DTBE Information Technology Work Group and stakeholders from the NTCA.

Scott McNabb has stepped down as Chief of the Epidemiologic Studies Section, Surveillance and Epidemiology Branch (SEB), and as Project Officer of the Tuberculosis Epidemiologic Studies

Consortium, in order to devote more time to his own research interests. Scott joined DTBE as the Epidemiologic Studies Section Chief in January 2001, and in his almost 2 years in that post he accomplished an impressive amount. Working with others at CDC, he coordinated the completion of the National TB Genotyping and Surveillance Network (NTGSN) project and the cleaning and closing of its databases. He emphasized the importance of disseminating this scientific information, and had the vision of devoting a special issue of the journal *Emerging Infectious Diseases* to the scientific accomplishments of NTGSN. In the future, the NTGSN databases will provide a rich source of data about the transmission of TB, and Scott would like to devote a large part of his time to working on the data analyses. Scott has also strongly supported translating the technical knowledge gained by NTGSN into information that can be easily accessible to TB controllers, and he will continue to work for this and to support CDC's plan to implement universal fingerprinting. He will stay on as the NTGSN Project Officer. Scott also guided the creation of the Tuberculosis Epidemiologic Studies Consortium (TBESC) and has been its first Project Officer and its Co-Chair. In addition to directing these two major efforts, Scott has developed individual projects. He recently returned from a trip to Armenia and Georgia where he engaged the Ministries of Health in the conceptualization of a Biotechnology Engagement Program proposal to build sustained capacity for conducting surveillance for TB in the former Soviet Union. Several years ago Scott developed a new model for evaluating the impact of surveillance in Africa, and he has worked tirelessly for the last year to adapt his model to evaluating TB surveillance in the United States. He will continue to work on these two important projects.

Ted Misselbeck has accepted a transfer to the public health advisor position in the City of St. Louis health department; his report

date was November 17, 2002. Ted joined CDC in January 2001 and was assigned to the Palm Beach, Florida, Health Department TB program. This assignment in Florida provided Ted with experience in both rural and urban areas. In February 2002, he helped investigate an outbreak in rural northern Florida. In August 2002 he assisted in the follow-up contact investigation of the southwest Oklahoma TB outbreak. Ted also assisted in the county's transition from manual to computer documentation reporting. Prior to joining DTBE, Ted worked as a primary therapist with Seabrook House in Seabrook, New Jersey, as well as working as a pharmaceutical sales representative with Sandoz Pharmaceuticals in Middlesex County, New Jersey and Staten Island, New York.

Barbara Myers, Program Operations Assistant in Field Operations Section II of DTBE's Field Services Branch (FSB), has left DTBE for a position in the Division of HIV/AIDS Prevention (DHAP). In her new position as a transportation assistant in DHAP, she will review travel vouchers. Barbara joined FSB/DTBE in May 2001; prior to her position with DTBE, she had worked with the Department of Defense at Dobbins Air Reserve Base as an Accounting Technician.

Shameer Poonja, MPH, TB Program Director, Department of Public Health, Division of TB, Massachusetts, was selected for the public health advisor position in New York City. Shameer began this assignment on November 17, 2002. He is working with Ken Johnson in NYC's TB Control Program and with the network managers in implementing a coordinated strategy for latent TB infection (LTBI) activities in Queens, NY. Shameer has spent the last 4 years with the Massachusetts Department of Public Health, 3 of which were with the Division of TB Prevention and Control, coordinating the Division's prevention activities. While with that Division,

he was directly responsible for its four community-based targeted testing projects, and also served as the liaison between the Division and various community-based organizations and coalitions. Prior to working in TB, Shameer spent a year with the Refugee and Immigrant Health Program at the Massachusetts Department of Public Health on a CDC-funded research project evaluating the TB screening practices of the INS-appointed civil surgeons. In 1998, Shameer received his MPH from Boston University School of Public Health.

Tom Privett, a Field Services Branch (FSB) field staff member, has transferred to the New Jersey TB Control Program in Trenton as the senior CDC assignee. Tom started with CDC on January 3, 1989, in the Los Angeles County TB Control Program, moving from a state TB position in south Florida. He developed the first initiative to house and feed homeless TB patients as incentives to promote adherence to prescribed therapy for cases and suspects. In October 1990, he transferred to Richmond, Virginia, where he served as the state TB Control Program's Acting Director after the retirement of Dr. Charles Wingo in 1992 until his return to Los Angeles County as the senior CDC assignee in October 1998. During his time in Virginia, he established a statewide housing option for homeless TB patients, significantly improving the percentage of this population completing therapy for TB disease. In his second trip to Los Angeles, he replaced his mentor Graydon Shepard after a 15-year tenure. He was responsible for the expansion of the incentives available to TB patients and the development of protocols for judicial review of Health Officer orders for civil detention of recalcitrant infectious TB patients as required by the *Health and Safety Code*. In his transfer to the New Jersey TB Control Program in Trenton, he replaces Kenneth Shilkret after 28 years. He will serve as Program Manager and chief liaison with the NJ TB Model Center in

Newark. His report date was December 16, 2002.

Ameisha Sampson joined the Outbreak Investigation Section in the Surveillance and Epidemiology Branch (SEB) as data manager. She will be working on databases related to Epi-Aids and data transfer issues between various platforms during Epi-Aids. In addition to working on these databases, she will also be working on the computerization of the data related to the rifapentine-pyrazinamide (RZ) survey. Ameisha has a bachelor of science degree in Computer and Information Science from Spelman College and is proficient in Microsoft Office, with a master user rating in Microsoft Word, Microsoft Excel, Microsoft PowerPoint, and Microsoft Access computer assessments. Before joining CDC, Amesiha worked as senior administrative assistant in the Corporate Benefits Department at Coca Cola enterprises where she initiated, designed, implemented, and maintained a relational database in Microsoft Access. This reduced the communication turnaround time between clients and department staff by 25%. Amesiha is also an expert in Visual Basic and SQL programming languages.

Alan Schley has joined the Surveillance and Epidemiology Branch (SEB) as its new Program Operations Assistant. Alan joined SEB on December 29, 2002, coming to CDC from a position with the Transportation Security Administration at Atlanta's Hartsfield International Airport. Alan also had a successful and well-decorated career as an administrative specialist in the U.S. Army. He brings a wide range of administrative skills and experience to CDC. Alan earned his bachelor of science degree in Management from Park College in Missouri in 1997.

Phil Spradling, MD, returned to DTBE on November 25, 2002. He joined the Research and Evaluation Branch to work with the TB Trials Consortium. Phil had been with the DTBE Surveillance and Epidemiology

Branch for 2 years before leaving recently for a position with the CDC National Immunization Program.

Gail Starks has joined the International Activity unit where she will be working as a public health advisor involved with country support, administrative issues, and special projects. Gail comes to DTBE from the NCHSTP Global AIDS Program (GAP) where she worked as a Management and Program Analyst with the Country Support Branch. While in GAP she was involved in assisting with the country support activities for the 25 GAP countries. She was instrumental in establishing GAP's programs overseas by facilitating the assignment of over 60 staff by coordinating Department of State country clearances, security and medical clearances, personnel actions, travel, and entitlements. She also served as the GAP liaison with CDC's Office of Global Health (OGH), Human Resource Management Office (HRMO), Financial Management Office (FMO), and Division of Commissioned Corps Personnel (DCP). She brings to us a wealth of knowledge about and experience with the complexities of domestic and international entitlements for civil service and commissioned corps employees, and in dealing with the requirements and regulations of the Department of State, UNAIDS, and USAID in the assignments and details of CDC staff abroad. Gail has worked with CDC since 1987 and has held positions in NCID and NCHSTP/OD.

CALENDAR OF EVENTS

March 10-13, 2003

**Case Management and Contact Investigation course
San Francisco, California**

Francis J. Curry National Tuberculosis Center

Contact: Training Coordinator

Tel: (415) 502-4600; fax: (415) 502-4620

E-mail: tbcenter@nationaltbcenter.edu
Web site for more information:
www.nationaltbcenter.edu

March 24-25, 2003

**World TB Day Conference 2003
London, UK**

Stop TB, North East London TB Network, and TB Alert

Web site for information:

http://www.stoptb.org/world.tb.day/WTBD_2003/Events/

March 31-April 4, 2003

**52nd Annual EIS Conference
Atlanta, GA**

Epidemic Intelligence Service (EIS),
Epidemiology Program Office (EPO), CDC

Web site for information:

<http://www.cdc.gov/eis/conference/conference.htm>

May 10-13, 2003

**13th European Congress of Clinical Microbiology and Infectious Diseases
Glasgow, UK**

European Congress of Clinical Microbiology and Infectious Diseases

Web site for information:

<http://www.akm.ch/eccmid2003>

May 16-21, 2003

**ATS 2003 - 99th International Conference
Seattle, Washington**

American Thoracic Society

Web site for information:

<http://www.thoracic.org/ic/ic2003/default.asp>

July 15-17, 2003

**TB Intensive course
San Francisco, California**

Francis J. Curry National Tuberculosis Center

Contact: Training Coordinator

Tel: (415) 502-4600; fax: (415) 502-4620

E-mail: tbcenter@nationaltbcenter.edu

Web site for more information:

www.nationaltbcenter.edu

October 29 - November 2, 2003

34th IUATLD World Conference on Lung Health

Paris, FRANCE

Web site for more information:

www.iuatld.org

November 10-13, 2003

Case Management and Contact Investigation course

San Francisco, California

Francis J. Curry National Tuberculosis Center

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